

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jung-Lim Yoon, *et al.*
Filing Date: Herewith
Title: FLIP CHIP TYPE SEMICONDUCTOR DEVICE AND METHOD OF
FABRICATING THE SAME

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10/10/01

Date

Vanessa Marakas

Vanessa Marakas

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to prosecution on the merits, please amend the above-identified application as follows:

In the Specification

Please replace the paragraph at page 6 line 22 through page 7 line 10 with the following rewritten paragraph.

-- In the passivation layer 60 of the pad area, at least one first metal line 68a is disposed, and in the passivation layer 60 of the fuse area b, a plurality of, for example at least a pair of, second metal lines 68b are disposed. Top surfaces of the first and second metal lines 68a, 68b have the same height as a top surface of the passivation layer 60. The first and second metal lines 68a, 68b include a copper layer pattern 67 having superior conductivity and electromigration as compared with an aluminum layer, and a diffusion barrier metal layer pattern 65 enclosing side walls and bottoms of the copper layer pattern 67. It is desirable that the diffusion barrier metal

layer pattern 65 include a material layer, for example a tantalum nitride layer which can prevent copper elements in the copper layer pattern 67 from penetrating through the interlayer insulation layer 53 and the passivation layer 60.--

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REMARKS

The amendments to the specification are made to clarify the description. No new matter is added to the application.

Attached hereto is a marked-up version of the changes made to the application by the current Amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Respectfully submitted,

Date: 10/10/01

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Applicant(s): Jung-Lim Yoon, *et al.*
U.S. Serial No.: Not yet assigned

Version with Markings to Show Changes Made

In the Specification

The specification has been amended as follows:

The paragraph at page 6 line 22 through page 7 line 10 has been amended as follows:

(Amended) In the passivation layer 60 of the pad area, at least one first [fist] metal line 68a is disposed, and in the passivation layer 60 of the fuse area b, a plurality of, for example at least a pair of, second metal lines 68b are disposed. Top surfaces of the first and second metal lines 68a, 68b have the same height as a top surface of the passivation layer 60. The first and second metal lines 68a, 68b include a copper layer pattern 67 having superior conductivity and electromigration as compared with an aluminum layer, and a diffusion barrier metal layer pattern 65 enclosing side walls and bottoms of the copper layer pattern 67. It is desirable that the diffusion barrier metal layer pattern 65 include a material layer, for example a tantalum nitride layer which can prevent copper elements in the copper layer pattern 67 from penetrating through the interlayer insulation layer 53 and the passivation layer 60.